

2.5

Other Areas

Review of the background of the cockpit crew raises some areas of concern. Both the F/O and F/E had, at one point in their careers, been dropped from the training program, or had been terminated and then reinstated. Their actions or lack of action during this accident sequence were not helpful to the Captain. Reinstatement in a flight position of terminated crewmen is not desirable.

The performance of ATC in this accident can be considered, in most cases, standard, but an error in judgement was made by not closing the airfield immediately when all C/F/R vehicles were occupied at the accident scene. In this case, however, it had no effect on the outcome of the accident. In another instance, the tower and the officer-in-charge of the fire-fighting personnel did not make preliminary coordination to provide the firefighters with the frequency of the aircraft. Direct communication between rescue personnel and an aircraft in distress is essential.

As the result of this accident, the U.S. N.T.S.B. made two recommendations to the U.S. F.A.A. The N.T.S.B.'s basis in making both recommendations is logical and the Presidency believes the recommendations merit positive and expedited action. The NTSB noted that the L-1011 C-3 compartment was approved as a "Class D" compartment by "extrapolations" from the 500 cu.ft. volume and the 1,500 cu. ft. per hour airflow guidelines in 14 CFR 25.857 (d) (5). The concept of a Class D compartment is that a fire within it would be controlled by oxygen depletion. This concept as it relates to the L-1011 compartment of 700 cu. ft. using a Nomex ceiling liner volume has been subsequently disproved by FAA tests.

The N.T.S.B. recommended that the "Class D" certification of the L-1011 C-3 cargo compartment be reevaluated yet the FAA responded that it has been demonstrated that a large class D type cargo compartment is in compliance with the requirements of FAR 25.857 (d). In view of the results of the FAA testing, the Presidency is concerned with the FAA's answer. There is certainly evidence that the C-3 compartment did not meet the intent of the FAR and that the FAR was inadequate for the purpose intended.

Two of the other three requirements for classification of a Class D Cargo Compartment were also not met by the C-3 cargo compartment. Therefore, it is believed, that the F.A.A. should reconsider its stand on this recommendation and take immediate positive action. (See Section 4 and Appendix H).

3. CONCLUSIONS

3.1

Findings

1. The flightcrew was properly certificated to conduct the flight, and the aircraft was properly maintained in accordance with prescribed procedures.

2. A fire probably started in the C-3 Cargo compartment.
3. The fire did not start in the Cabin area:
4. The fire did not start in the left cheek area.
5. The majority of the evidence indicates that the fire did not start in the area aft of the C-3 cargo compartment.
6. The ignition source for the fire was not determined.
7. The initial fuel for the fire was probably baggage and cargo in the C-3 cargo compartment.
8. There was no detectable evidence of a pre-fire fault in the aircraft systems.
9. The Operator's Emergency and Abnormal checklist procedures were not adequately indexed for rapid identification.
10. During the descent to Riyadh, the Captain did not brief the cabin crew regarding plans to evacuate.
11. The Captain did not fully utilize his flight deck crew during the emergency.
12. Upon landing, the cabin and ambient differential pressure was negligible.
13. The aircraft had adequate braking capability available to make a maximum stop on the runway.
14. The Captain elected to taxi off the runway prior to bringing the aircraft to a stop.
15. Toxic fumes including carbon monoxide, were being produced by burning materials and were inhaled by the aircraft occupants.
16. Autopsy findings indicated that the occupants had inhaled a high percentage of carbon monoxide.
17. There was no evidence of an attempt to open the doors from the inside the aircraft by the emergency method.
18. Crash/Fire/Rescue personnel were not properly equipped or trained. This resulted in their actions being inadequate and disorganized for the situation at hand.

19. The degree of seriousness of the accident is directly related to the actions of the Captain, and C/F/R services.
20. Investigative evidence and testing indicates that the C-3, class D compartment of the L-1011 did not meet the intent of FAR 25.857 (d) and that the FAR is inadequate for the purpose intended.

3.2 Probable Cause

The Presidency of Civil Aviation determines that the probable cause of this accident was the initiation of fire in the C-3 cargo compartment. The source of the ignition of the fire is undetermined.

Factors contributing to the final fatal results of this accident were (1) the failure of the Captain to prepare the cabin crew for immediate evacuation upon landing, and his failure in not making a maximum stop landing on the runway, with immediate evacuation, (2) the failure of the Captain to properly utilize his flight crew throughout the emergency (3) the failure of C/F/R headquarters management personnel to insure that its personnel had adequate equipment and training to function as required during an emergency.

4. SAFETY RECOMMENDATIONS

4.1 National Transportation Safety Board

As the result of findings in this accident the U.S. National Transportation Safety Board made two recommendations to the U.S. Federal Aviation Administration. These recommendations together with the FAA response are contained in Appendix H of this report.

The Presidency of Civil Aviation requests that the FAA reconsider its action regarding N.T.S.B's recommendation A-18-12 and take expedient corrective action.

4.2 Presidency of Civil Aviation

Following the accident, the Presidency made a series of recommendations to Saudia they were, in part, as follows:

4.2.1 FLIGHTCREW TRAINING AND STANDARDIZATION

1. Revise existing training programs and initiate additional programs to insure that flight crews are given adequate instruction for their immediate and aggressive response to any problems relative to safety of flight. Such programs should include instructions for immediate action to be taken upon the activation of any aircraft's fire and smoke warning devices and/or